

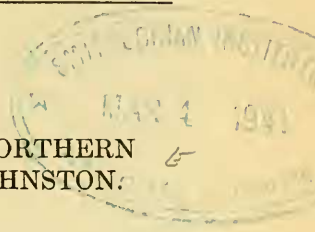
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Memo

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

FOUR NEW ASTERACEAE FROM NORTHERN
MEXICO COLLECTED BY I. M. JOHNSTON:

BY S. F. BLAKE.



The new Asteraceae here described are based on specimens collected in northern Mexico by Dr. Ivan M. Johnston in 1938, and referred by him to the writer for study.

Brickellia robinsoniana Blake, sp. nov.

Suffrutescens ramosa, ramis erectiusculis usque ad apicem foliosis glanduloso-puberulis; folia alterna ramealia parva ovata breviter petiolata obtusa basi cuneata grosse paucidentata utrinque viridia glanduloso-puberula firma; capitula magna in apicibus ramorum sessilia solitaria ca. 82-flora ca. 1.8 cm. alta (corollis omissis); involucri 7-8-seriati valde gradati 1.5 cm. alti dense stipitato-glandulosi phyllaria exteriora et media obovata obtusa v. acutiuscula, basi cuneata valde costata costis 4-6 albis, apice abrupte dilatato herbaceo ovato, intima multo tenuiora linearia acuminata non appendiculata purpurascens; achenia sparse hispidula 6 mm. longa, pappo albido 8.5 mm. longo, setis minute hispidulis.

"Stems numerous, tufted, forming round masses 1½-2 ft. high;" old stems denudate, brownish-white, 4 mm. thick below; branches numerous, again branched, leafy except toward base, terete, striate, brownish-white, densely stipitate-glandular with longer and shorter gland-tipped hairs; internodes mostly 3-8 mm. long; petioles narrowly margined to base, 1 mm. long or less; blades 7-10 mm. long, 4-6 mm. wide, coarsely and sometimes subhastately toothed with 1-3 blunt triangular teeth on each side, 1-nerved and with a pair of weak basal veins, densely stipitate-glandular like the stem and more or less impressed-glandular with shining glands, especially beneath; heads campanulate, sessile, erect, about 1.8 cm. high (excluding corollas), 1.5-2 cm. thick (as pressed); herbaceous tips of middle and outer phyllaries 2-5 mm. wide, the inmost phyllaries only 0.5-0.8 mm. wide; corollas purple, very slender, glabrous, 9.5 mm. long (teeth 0.7 mm. long, ovate, obtusish); achenes subcylindric, blackish, sparsely and minutely hispidulous, 10-ribbed and with occasional weaker intermediate ribs, 6-6.3 mm. long; pappus 1-seriate, the bristles 30-32; style branches clavellate, whitish.

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MEXICO: Crest of pass 8 miles south of Majoma, on road from Cardona southwest to Sierra Hermosa, Zacatecas, 4 Sept. 1938, *Johnston 7395* (type in Gray Herb.; dupl. in Nat. Arb. Herb.).

This species, by reason of its many-flowered heads and appendaged phyllaries, is a member of the section *Macrobrickellia*. *Brickellia monocephala* Robinson, the only species of that section previously known, is very different in aspect, being a simple herb from a tuberous-thickened, somewhat moniliform rootstock, with merely puberulous stem, thin ovate entire or few-toothed leaves up to 5 cm. long and on slender petioles about 1 cm. long, a single long-pedunculate nodding head, and linear or linear-spatulate inner phyllaries with dilated, subscarios, lacerate tips. The species is dedicated to the memory of Dr. B. L. Robinson, monographer of this genus and of the Eupatorieae generally, whose death in 1935 left an unfilled gap in the ranks of American botanists.

Aplopappus johnstonii Blake, sp. nov.

Suffrutescens valde ramosus ca. 10 cm. altus ubique canescenti-tomentosus dense foliosus; folia minima sessilia oblonga v. ovata pauciserrata dentibus setis albis rigidis 1-1.5 mm. longis donatis, in axillis prolifera; capitula mediocria discoidea sessilia apicibus ramorum et ramulorum solitaria; involucri strigoso-pilosi phyllaria linearia apice albo-setosa; achenia dense sericeo-pilosa; pappus rigidus, setis interioribus complanatis; appendix ramorum styli lineis stigmaticis paullo brevior.

Caudex woody, becoming 1 cm. thick; stems numerous, much branched throughout, 5-10 cm. high, rigid, spreading, densely canescent-tomentose, densely leafy; leaves alternate; internodes 1-2 mm. long; main stem leaves linear-oblong, 3-6 mm. long, 1-2 mm. wide, obtuse, slightly amplexicaul, densely and canescently subtomentose-pilose, plane, thick, crenate-serrate, the 3-5 pairs of teeth short, thick, calloused, tipped, like the apex of leaf, with a stiff white seta 1-1.5 mm. long; branch leaves mostly ovate, shorter and relatively broader, like those of main stem bearing tufts of reduced leaves in the axils; heads hemispheric-campanulate, 33-flowered, about 7 mm. high and thick (moistened), solitary at tips of branches and branchlets, these leafy throughout, sometimes in cymose groups of 2 or 3; involucre about 7-seriate, strongly graduate, about 7 mm. high, appressed, the phyllaries linear or the outer narrowly lance-linear, obtuse to acute, tipped with a stiff white mucro 0.2-0.3 mm. long, the outer subherbaceous essentially throughout and densely canescent-substrigose, the inner broader, whitish-chartaceous with greenish midline above, 1-nerved, canescent-substrigose chiefly along midline; receptacle fimbriate; corollas pale yellow, sparsely erect-pilosulous on tube and lower part of throat, glabrous on the teeth, at anthesis 4.5 mm. long, with subcylindric throat little thicker than the tube (tube 0.8 mm., throat 3-3.2 mm., teeth ovate, erect, 0.6 mm. long), in age about 5.2 mm. long, with throat abruptly enlarged above the middle (tube 1.2 mm., throat 3-3.3 mm., teeth 0.8 mm.); achenes obovoid, densely silky-pilose, 1.5 mm. long; pappus slightly brownish-white, 5 mm. long, of stiff graduated hispidulous bristles, the inner decidedly

flattened; style branches 1.2-mm. long, the triangular acuminate hispidulous appendage 0.5 mm. long, slightly shorter than the stigmatic area.

MEXICO: In dry heavy alkaline soil, one mile south of Hermanas, on road from Piedras Negras south to Monclova, Coahuila, 22–24 Aug. 1938, *Johnston* 7066 (type, Gray Herb.; duplicate, Nat. Arb. Herb.); on alkaline flats, not common, 4 miles west of Cuatro Cienegas, on road from Monclova westward to beyond Cuatro Cienegas, Coahuila, 24–26 Aug. 1938, *Johnston* 7131 (Gray Herb.).

In Hall's key (1928) to the species of the section *Blepharodon* this plant, having style appendages shorter than the stigmatic lines, would come next to *A. brickellioides* Blake. Its obviously closest relationship, however, is with *A. nuttallii* Torr. & Gray, from which it is very distinct in its low much-branched habit, its dense canescent tomentum, its tiny few-toothed leaves not at all narrowed to base and consistently with axillary fascicles, its canescently substrigose or strigose-pilose (not glandular-puberulous) involucre, its glabrous corolla teeth, and other characters.

Viguiera phenax Blake, sp. nov.

Annua tenuis erecte ramosa foliosa 3–6 dm. alta; caulis strigosus; folia inferiora opposita superiora alterna anguste lanceolata v. lineari-lanceolata longe acuminata basi longe cuneata petiolata remota serrata v. serrulata utrinque strigosa et praecipue in margine sparse hispida; capitula pauca mediocria radiata aurea terminalia et in axillis supremis bene pedunculata; involucri 2-seriati inaequalis 6–8 mm. alti phyllaria acuminata strigillosa et sparsius hispida et hispido-ciliata infra medium valde 2-costata costis albidis, apice longiore herbaceo plusminusve laxo; achenia juventate sparse puberula maturitate glabra; pappus nullus.

Stem greenish white, terete, obscurely sulcate, 1–3 mm. thick below, branched above the middle or sometimes also near the base with erectish branches, toward base sparsely strigose with subtuberculate-based hairs or nearly glabrous, densely strigose above, leafy to the apex; lower internodes 2–6 cm. long, the upper shorter; lowest leaves (2 or 3 pairs) opposite (fallen in specimens examined), the others alternate; petioles 0.5–1.5 cm. long, narrowly margined above by the decurrent leaf base, naked only toward base, strigose and sparsely hispid-ciliate with hairs 1.5–3 mm. long; blades narrowly lanceolate or linear-lanceolate, or the uppermost linear, the larger 4–7 cm. long, 4–9 mm. wide, attenuate and often falcate, callous-tipped, not revolute on margin, remotely serrate or serrulate above the tapering base (teeth low, obtuse, callous-tipped, mostly 4–8 mm. apart) or the uppermost entire, above deep green, rather densely strigose on surface and with some longer looser hairs chiefly along the nerves and margin, beneath equally green and similarly strigose, the hairs along the ribs longer and with distinctly tuberculate base, the costa whitish and prominulous above, it and the pair of subbasal nerves prominulous beneath; heads about 5–12 per stem, solitary at tips of branches and in the uppermost axils, 1.5–1.8 cm. wide (as pressed), on densely strigose naked or few-bracted very slender peduncles 2.5–8.5 cm. long; disk 5–(fruit) 10 mm. high, 8–(fruit) 12 mm.

thick (as pressed); involucre hemispheric-campanulate; phyllaries not contracted above the 2-ribbed base; rays 13, golden yellow, neutral, the tube spreading-hispidulous, 1.5 mm. long, the lamina oval, 2-denticulate, 7-10-nerved, about 5.5 mm. long, 3.2 mm. wide, sparsely hispidulous dorsally on the nerves; disk corollas numerous, golden yellow, densely hispidulous on tube and base of throat, sparsely so on teeth, 4.2-4.5 mm. long (tube 1.2 mm., slightly calyptrate at base, throat obconic, 2.2-2.5 mm., teeth ovate, 0.8 mm. long); pales acute to acuminate, blackish green above, 4.5- (in age) 8 mm. long, the outer long-hispid along keel, the inner short-hispid, the subscarios margin often produced into 2 short teeth; achenes oblong, bluntly quadrangular, in youth sparsely hispidulous on sides and at apex, at maturity mottled black and white, glabrous except for the puberulent apex, 2.8 mm. long, 0.8 mm. wide; pappus none.

MEXICO: In low heavy soil in grasslands, 6 miles west of Piloncillo, on road from Jimenez to Camargo, via El Arroyo del Fierro, Chihuahua, 24 Sept. 1938, *Johnston* 7868 (type, Gray Herb.); abundant and conspicuous plant in *Hilaria* meadow, 7 miles north of Charco Piedro (25 miles northeast of Camargo), on road from Camargo northeast to Mesteñas, Chihuahua, 25 Sept. 1938, *Johnston* 7932 (Gray Herb., Nat. Arb. Herb.).

In general appearance and in most of its characters this plant is remarkably similar to *Viguiera ciliata* and its var. *hispida* (Rob. & Greenm.) Blake. In that species, however, which belongs in the section *Heliomeris*, the phyllaries are strictly herbaceous throughout (and marked with 3 oil-tubes), without indication of the two strong whitish ribs that are so conspicuous in the lower part of the phyllaries of *V. phenax* even when the heads are young. *Viguiera phenax*, accordingly, must be placed in the section *Diplostichis* near *V. mucronata* Blake of Colombia and Venezuela, a species with pappose achenes and of quite different general appearance.

***Thelesperma ramosius* Blake, sp. nov.**

Perenne e radice verticali multicaule e basi ramosum subpedale glabrum; folia lineari-filiformia crassa integra prope basin parce ciliata; capitula pro genere parva discoidea solitaria longe pedunculata; phyllaria exteriora brevissima ovata obtusa, interiora usque infra medium libera modice scarioso-marginata; corollae inaequaliter lobatae, dente uno fauce paulo longiore, ceteris fauce brevioribus; achenia oblonga valde tuberculata; pappi aristae 2 validae 1 mm. longae erectae et antrorsim hispido-ciliatae vel interdum patentes et retrorsim hispido-ciliatae.

Herbaceous perennial about 25 cm. high from a deep vertical root passing above into a short much-branched caudex, glabrous and glaucous throughout except for the ciliate leaf-bases; stems numerous, forming a dense entangled mass, slender, 1-1.5 mm. thick, oppositely branched (branches diverging at an angle of 45° or less), striate, inconspicuously leafy for about half their length; leaves opposite, connate at base, narrowly linear, 1-2.7 cm. long, 0.6-1 mm. wide, flattened, fleshy, obtusely callous-tipped, the upper reduced; peduncles very slender, naked, 10-15 cm. long, terminating stems and branches and in the upper axils; disk campanulate, 7-8 mm. high, 5-7 mm. thick; outer phyllaries 5-6, ovate or lanceolate, thick-herbaceous,

appressed, 1–1.2 mm. long; inner phyllaries 7–8, ovate, 4–4.5 mm. long, obtuse, united for less than half their length, the whitish margins about 0.3 mm. wide; corollas golden yellow with brown nerves, glabrous, zygomorphic, 3.8–4.5 mm. long (tube 1.8–2 mm., throat campanulate, 0.8–1 mm. long below the longest tooth, 1.2–1.8 mm. long below the shorter teeth; teeth ovate, the longest 1.3–1.7 mm., the others 1–1.2 mm. long); pales membranous-scarious, oblong or oblong-ovate, rounded or emarginate, glabrous, erose, white with 2 brown vittae, 5–6 mm. long, partly enfolding the achenes and falling with them; achenes narrowly oblong, obcompressed, somewhat thickened, slightly incurved, 3–3.8 mm. long, 1–1.3 mm. wide, the typically blackish body at maturity densely tuberculate all over (the tubercles coarser on the outer face), glabrous, not winged or margined; pappus awns 2, equal, 1–1.2 mm. long, rigid, narrowly triangular, trigonous, persistent, normally erect and densely antrorse-hispid-ciliate, occasionally wide-spreading and retrorsely hispid-ciliate; style branches with rather abrupt subulate tips shorter than the remainder of the appendage.

MEXICO: In dry heavy alkaline soil, one mile south of Hermanas, road from Piedras Negras south to Monclova, Coahuila, 22–24 Aug. 1938, Johnston 7059 (type, Gray Herb.; duplicate, Nat. Arb. Herb.).

Nearest *Thelesperma simplicifolium* Gray, a coarser plant with the apparently solitary or few stems leafy throughout, the heads radiate and normally much larger, the inner phyllaries more broadly white-margined, and the pappus much reduced or obsolete.